Orsted Onshore Ireland Midco Limited

15: MEMORANDUM RESPONSE TO SUBMISSIONS RECEIVED

CUMULATIVE EFFECTS

Proposed Oatfield Wind Farm Project, Co. Clare: ABP Case No. ABP-318782-24

June 2024

CONTENTS

1 CUMULATIVE EFFECTS

1.1 Introduction

The following memorandum has been prepared to address submissions received during the observations and submissions period associated with the Oatfield Wind Farm Planning Application, ABP-318782-24, which was submitted to An Bord Pleanála on 22nd December 2023. The consultation period for submissions and observations was 22nd December 2023 to 19th February 2024.

This is memorandum number 15 in the Oatfield Wind Farm submission response documentation, which addresses common themes identified about the consideration and assessment of cumulative effects as summarised in **EIAR Chapter 20 Impact Interactions & Cumulative Effects** (hereafter referred to as **EIAR Chapter 20**) and considered within each environmental factor chapter as relevant, see Part 2 of the EIAR.

References are made to submission responses on Ornithology (memorandum no. 4 of the submission response documentation, hereafter referred to as **memorandum no. 4**), Hydrology and Hydrogeology (memorandum no. 5 of the submission response documentation, hereafter referred to as **memorandum no. 5**), Land, Soils and Geology (memorandum no. 6 of the submission response documentation, hereafter referred to as **memorandum no. 6**), Shadow Flicker (memorandum no. 8 of the submission response documentation, hereafter referred to as **memorandum no. 8**), Noise (memorandum no. 9 of the submission response documentation, hereafter referred to as **memorandum no. 9**), LVIA (memorandum no. 10 of the submission response documentation, hereafter referred to as **memorandum no. 10**), Traffic and Transport (memorandum no. 12 of the submission response documentation, hereafter referred to as **memorandum no. 12**) and Air Quality (memorandum no. 13 of the submission response documentation, hereafter referred to as **memorandum no. 13**).

Responses to submissions received from regulatory & prescribed bodies are presented in Section 2 of this memorandum, and responses to common themes in submissions received from the general public are presented in Section 3.

1.2 Statement of authority

This memorandum was prepared by Ayodeji Oyelami and reviewed by Krista Farrugia, both of Nicholas O'Dwyer. Ayodeji is a Senior Environmental Consultant with 9 years of experience in in preparing environmental reports including Environmental Impact Assessments, Sustainability Appraisal, Environmental Constraints and Habitat Assessments. He has coordinated EIAs for a wide range of developments including oil and gas infrastructure, industrial complexes, roads and ports. Ayodeji holds a Doctorate in Environmental Science from Lancaster University, UK.

Krista is a Principal Environmental Consultant with Nicholas O'Dwyer, with 20 years of experience in the field of EIA. Krista holds a Master of Science in Integrated Environmental Management from the University of Bath, a Post Graduate Diploma in Wildlife Biology and Conservation from Edinburgh Napier University, and a Bachelor of Science (Hons) in Chemistry and Biology from the University of Malta. She is a

Practitioner with the Institute of Environmental Management with extensive experience in EIA coordination, environmental auditing, Strategic Environmental Assessment (SEA), ecological studies and Appropriate Assessment, and landscape and visual assessment. Projects have included the assessment of a wide range of developments, including residential and commercial, waste management facilities, roads, port development, coastal infrastructure, and aquaculture. Krista has worked extensively in Malta and more recently in Ireland.

2 REGULATORY & PRESCRIBED BODIES

2.1 Clare County Council

In its submission, Clare County Council (hereafter referred to as 'the Council') expressed concerns about the ''*extent of windfarm applications in the general area that are currently proposed or at the pre-planning stage…*''. Furthermore, the Council is concerned that ''*the cumulative impact of this development with other applications may not have been appropriately assessed in the submitted EIAR*''.

Additionally, the Council noted *''… an application for another windfarm at Ballycar has recently been submitted to the Board. Whilst the current application includes an assessment in terms of cumulative impacts on the proposed Knockshanvo windfarm, given that both applications are within the immediate geographical area (0.5km away) it is not clear to the Planning Authority why two separate applications are being made. In this particular instance, a single application would allow for a more comprehensive analysis in terms of the EIAR preparation and would also allow for a more coordinated approach to the development of these lands''*.

Response:

Table 2.2 of **EIAR Chapter 2 EIA Methodology** (hereafter referred to as **EIAR Chapter 2**), included an evaluation of projects that were scoped in for cumulative assessment. These projects were then assessed in each environmental factor chapter as relevant. Table 2.3 of **EIAR Chapter 2** lists the wind farm developments within 20km of the Proposed Development. Planning research was conducted in relation to all relevant projects within the surrounding 10km as well as all wind farms within 20km of the Proposed Development site to ensure that all projects that could give rise to cumulative effects together with the Proposed Development were screened in. Section 2.4.3 of **EIAR Chapter 2** further describes the methodology employed in compiling the list of projects for consideration in the cumulative assessment in accordance with EU EIA Directive, specifically Annex IV, point 5 (e) of the EU EIA Directive which requires that the cumulation of effects with other existing and/or approved projects are described in the EIAR.

EIAR Chapter 20 presents a summary of findings of the cumulative assessments carried out for each of the environmental factor chapter. As noted in **EIAR Chapter 20**, the EIA Directive requires consideration of cumulative effects with existing and/or approved projects. Nonetheless, potential cumulative effects were also considered for (i) projects that are currently going through the planning application system; and (ii) projects that may be envisaged through a plan/programme although there has not been any application submitted yet (i.e., consideration of future development). However, it is important to note that the level of detail publicly available per project will reflect the stage within which it sits in the planning application process. Crucially, therefore, it follows that the level of detail of cumulative assessment is reflective of the level of detail of information available at time of assessment.

At the time of the submission of the Oatfield Wind Farm planning application, the planning application for the Knockshanvo Wind Farm had not yet been submitted for planning, and no finalised detailed information was available. The planning application for Knockshanvo

Wind Farm and other upcoming wind farm developments will therefore need to consider the cumulative impacts of this Proposed Development, for which all relevant information has been submitted in the planning system.

Similarly, at the time of submitting the planning application for the Proposed Development, the Ballycar Wind Farm was in its pre-planning phase, with proposed turbine locations and specifications not yet finalised. Thus, specific details were unavailable for a comprehensive cumulative assessment.

Notwithstanding this, it was considered in cumulative assessment for some environmental factors like LVIA and shadow flicker. Section 12.9 of **EIAR Chapter 12 Shadow Flicker** (hereafter referred to as **EIAR Chapter 12**) includes an assessment of operational and granted windfarms within 20km of the Proposed Development and also considers windfarms in the pre-planning stages within 20 km, such as Knockshanvo and Ballycar.

Section 14.10 of **EIAR Chapter 14 Landscape and Visual** (hereafter referred to as **EIAR Chapter 14**) also assesses the potential cumulative impact of the Proposed Development and identifies 2 single turbine developments and 1 consented wind farm, 1 proposed wind farm (under appeal – subsequently permitted since the proposed Oatfield wind farm application was submitted), and 3 wind farms at pre-planning stage contained within the study area.

2.2 Department of Housing, Local Government and Heritage

Summary of issue raised:

The Department of Housing, Local Government and Heritage submitted the following comments regarding the potential cumulative or in-combination effects on the Hen Harrier bird species: "*The report discusses the potential cumulative or in-combination effects of the proposed application. It identifies the potential for cumulative impacts of the current development with the proposed Knockshanvo Windfarm in the immediate vicinity however no analysis is undertaken of the significance of this impact on the relevant population. The cumulative impact assessment also needs to consider all pressures operating on the surrounding environment. Most specifically, analysis of proposed forestry planting and felling licence applications in the area must be assessed*."

Response:

EIAR Chapter 5 Project Description defined the areas of tree felling, while Section 8.6 of **EIAR Chapter 8 Ornithology** (hereafter referred to as **EIAR Chapter 8**) included detailed consideration of the potential impacts on Hen Harrier, including potential impacts associated with habitat loss and fragmentation, habitat degradation, disturbance and displacement, during all stages of the Proposed Development in the context also of other site uses in the zone of influence.

Furthermore, **memorandum no. 4** elaborated on potential impacts on the Hen Harrier population. Cumulative effects were assessed based on potential impacts from the Proposed Development in the context of other nearby projects, in as much detail as was afforded by the level of ornithological information available for these nearby projects, which include Knockshanvo and Ballycar wind farm developments. These impacts have been minimised where possible within the Proposed Development design and embedded

mitigation and are addressed through detailed mitigation including the Species and Habitat Management Plan (SHMP). Detailed Collision Risk Modelling using data collected between 2021 and 2023 identified that anticipated Hen Harrier collision fatalities during the operation of the Proposed Development will be 0.01 Hen Harriers per year. This rate of Hen Harrier collision fatalities would not be significant in a population context.

It is not possible, however, to undertake comprehensive assessment of cumulative impacts with Knockshanvo Windfarm as there is no publicly available data for Hen Harrier using the Knockshanvo Windfarm area; as the project has not been submitted to the planning authorities at the time of writing of the original EIAR for the Oatfield Proposed Development, the cumulative assessment of impacts to Hen Harrier, therefore, will be part of the Knockshanvo project application, as the data for the Oatfield windfarm has been made available as part of its planning submission.

The NIS report objectively concluded that, following an examination, analysis and evaluation of relevant information, including in particular the nature of the predicted impacts from the Proposed Development and the implementation of mitigation measures, the Proposed Development will not adversely affect (either directly or indirectly) the integrity of any European site, either alone or in combination with other plans or projects.

Section 9.4.3.2 of **EIAR Chapter 9 Hydrology and Hydrogeology** (hereafter referred to as **EIAR Chapter 9**) and **EIAR Chapter 10 Land, Soils and Geology**, Section 10.4.3.2 address clearing of forested areas.

Furthermore, **memorandum no. 5** and **memorandum no. 6** have provided clarification.

Felling of commercial forestry is in line with baseline conditions and is likely to happen with or without the Proposed Development, that is; part of Do Nothing Impact (**EIAR Chapter 9**, Section 9.4.2).

Furthermore, Section 9.4.3.2 of **EIAR Chapter 9** states that the overall potential effects are considered to be of moderate significance, permanent but reversible, and adverse, although of a minor scale in comparison to the normal forestry activities taking place at the Site. The mitigation measures proposed in Section 9.5.2.3 of **EIAR Chapter 9** will ensure that potential effects from this work are reduced to slight significance.

Memorandum no. 6 identified that construction phase of the Proposed Development will require the clear-felling of commercial conifer plantation and replanting in accordance with the licensing requirements of the Forest Service of the Department of Agriculture, Food and the Marine. Afforestation of alternative lands equivalent in area to those of permanent felling will take place (see **EIAR Chapter 5 Project Description**). Felling of commercial forestry is in line with baseline conditions and is likely to happened with or without the Proposed Development. Felling of commercial forestry is in line with baseline conditions and is likely to happened with or without the Proposed Development.

3 GENERAL PUBLIC

3.1 Theme 1: Assessment of cumulative impacts

There were several comments from the 3rd party submissions pertaining to the exclusion of Knockshanvo and Ballycar wind farms in the cumulative effect assessment.

Please refer to the earlier response to the submission from the Clare County Council on this issue Section 2.1 above.

3.2 Theme 2: Cumulative ornithological effects

There were some responses pointing out that the EIAR did not consider cumulative effects of other wind farms on ornithological receptors.

The Proposed Development was subject to thorough surveys and assessment and the results of these surveys are presented within **EIAR Chapter 8**. The concerns raised with regards to potential cumulative effects on Ornithology are discussed in **memorandum no. 4**.

Section 8.6.3.4 of **EIAR Chapter 8** considered other projects (including wind farm developments) for cumulative effects on ornithological features. The assessment concluded that the Proposed Development does not have the potential to give rise to significant adverse effects on ornithological features in the River Shannon and River Fergus Estuaries SPA.

Where possible, cumulative assessments have been undertaken but the scope of these surveys is limited given the availability of relevant information dependent upon the status of the other applications.

3.3 Theme 3: Cumulative hydrology and hydrogeology effects

The submissions are concerned that the EIAR does not consider the cumulative effect of other wind farms in the area that are currently at various stages of planning.

In terms of hydrology and hydrogeology, **memorandum no. 5** provides a comprehensive response.

The cumulative impact or effect associated with the Proposed Development is considered and assessed in Section 9.6.5 of **EIAR Chapter 9**. Industry standard is to approach cumulative effects based on the combined effects of similar developments in the area. However, the assessment of cumulative effects under Hydrology and Hydrogeology must consider some other variables, such as; the connectivity between similar developments or placement within hydrological catchments, the diffuse cumulative effect on the receptor in the catchment (surface water / groundwater), the sensitivity and importance of the receptor in terms of hydro chemical and ecological status, and the aims and objectives of policy and legislation, namely the Water Framework Directive (WFD) and the objective to maintain or achieve at least ‘good’ water quality in all water bodies. These factors are brought into the assessment from the outset whereby;

- Qualifying the importance and sensitivity of receptors includes the fact that surface water groundwater bodies are highly important and sensitive receptors in

their own right and that how any adverse effect is considered potentially significant when considering the ongoing cumulative effects on those bodies and the ongoing deterioration of water quality on a national scale;

- Qualifying the significance of effects includes for cumulative effects for potential downstream receptors, for example; the net increase in runoff is a very small effect, however, this must be considered under the scope of cumulative effects and catchment scale mitigation for flood risk, and therefore, it was considered significant and mitigated for;
- The scoping and objective of mitigation measures, as discussed above, sets out to ensure potential adverse effects to water quality are minimised, and that residual effects are likely to be neutral to slight temporary during the construction phase, and neutral to beneficial during the operational phase;
- The expected residual effects to water quality following successful implementation of mitigation with no accidental releases is neutral, in the event that a minor accidental release occurs observation through monitoring will be conducted and resolved as quickly as possible through the escalation of emergency intervention resulting in a temporary slight effect. Therefore, on this basis, the Proposed Development is not likely to significantly contribute to cumulative effects on water quality downstream.

Taking into consideration the cumulative effects of the proposed wind farm developments; Section 9.7.1 states that "*There are no significant cumulative effects anticipated from other projects during the construction phase of the Proposed Development. When considering cumulative effects of pressures on the surface water networks it is advised to look at this by catchment areas. The Development is not considered likely to significantly contribute to cumulative effects in terms of water quality nor flood risk, however if another Wind farm was to be in a construction phase in the same catchment at the same period this will likely raise the cumulative effect to slight on surface water networks and groundwater systems. [It is assumed that the] residual effects from other construction projects would be similar to this development i.e., would lead to slight residual effects on the hydrology and hydrogeological environment with the protection of waterbodies such as buffer zones, silt screens and active management treatment rains*."

This assumes that with "*similar developments, construction activities and potential adverse effects in the area, there is the potential for such incidents to have a cumulative effect on water quality to some degree if such incidents occur on multiple sites in a short period of time and within the same hydrological catchments*."

3.4 Theme 4: Cumulative shadow flicker effects

Several third-party submissions have raised concerns regarding the potential for combined shadow flicker impacts arising from the Proposed Development and the pre planning Knockshanvo Wind Farm.

As indicated in **EIAR Chapter 20**, potential cumulative effects were also considered for (i) projects that are currently going through the planning application system; and (ii) projects that may be envisaged through a plan/programme although there has not been any application submitted yet (*i.e.*, consideration of future development). However, it is

important to acknowledge that the available project details will depend on the project's stage within the planning application process. Consequently, the comprehensiveness in the cumulative assessment reflects the level of information obtainable at the time of the assessment.

Cumulative effects related to shadow flicker have been addressed in **memorandum no. 8**. Also, a thorough assessment of potential cumulative effects was conducted as part of the shadow flicker assessment presented in Section 12.9.1 of **EIAR Chapter 12**.

Potential cumulative effects were identified with the adjacent pre planning Knockshanvo wind farm and a cumulative shadow flicker assessment was therefore carried out, whereby the turbines of both the Proposed Development and the Knockshanvo wind farm were considered. At the time that the shadow flicker assessment was undertaken, the planning application for the Knockshanvo Wind Farm had not been submitted for planning, and no finalised detailed information is yet available. However, the planning application for Knockshanvo Wind Farm will likely consider the cumulative impacts from the Proposed Development, for which all relevant information has been submitted in the planning system. Nonetheless, **EIAR Chapter 12** for the Proposed Development presented an assessment of potential cumulative shadow flicker effects, using the latest known project details for Knockshanvo Wind Farm available at the time. As mentioned, it will be the responsibility of the Knockshanvo Wind Farm to demonstrate how it considers that Wind Energy Development Guidelines thresholds for shadow flicker can be achieved in practice through the cumulative operation of both sites.

At the time the shadow flicker assessment was conducted for the submitted EIAR, Ballycar Wind Farm was in the pre-planning stage, and proposed turbine locations and specifications were not publicly available. The planning application for Ballycar Wind Farm has since been submitted. Examination of the shadow flicker assessment carried out as part of this indicates that the 10 x rotor diameter shadow flicker study area for Ballycar Wind Farm does not overlap with that of the Proposed Development. There is therefore no potential for cumulative effects.

3.5 Theme 5: Cumulative noise and vibration effects

Several responses raised concerns stating that noise cumulative effects and impacts in the planning application have not been properly addressed.

The potential cumulative effects on Noise and Vibration are discussed in **memorandum no. 9**.

Section 13.10 of **EIAR Chapter 13 Noise and Vibration** provides comprehensive information on cumulative effects during different stages of the Proposed Development. A cumulative operational assessment was carried out with the pre planning Knockshanvo wind farm. The assessment demonstrates that predicted cumulative operational levels do not exceed the derived noise limits, with some negligible exceptions (exceedances of derived noise limits of less than 1dB) which would be unlikely to arise in practice (as the receptors would not be downwind of all turbines). Hence the noise limits would be unlikely to be exceeded. Therefore, cumulative noise levels would still likely represent a long-term reversible adverse effect which is not significant.

At the time of this submission, the planning application for the Knockshanvo Wind Farm had not been submitted for planning and therefore no finalised detailed information is yet

available. The planning application Knockshanvo Wind Farm will consider the cumulative impacts from this Proposed Development, for which all relevant information has been submitted in the planning system.

3.6 Theme 6: Cumulative landscape and visual effects

There were several concerns in the responses regarding the vast scale and cumulative effect of wind turbines in the East Clare area as a whole.

The potential cumulative effects on LVIA are discussed in **memorandum no. 10**. Also, Section 14.10 of **EIAR Chapter 14** assesses the potential cumulative impact of the Proposed Development and identifies 2 single turbine developments and 1 consented wind farm, 1 proposed wind farm (under appeal – subsequently permitted since the proposed Oatfield wind farm application was submitted), and 3 wind farms at pre-planning stage contained within the study area.

The cumulative assessment was divided into the 'Existing Baseline Scenario', which accounts for all existing and consented development within the study area, as per EIA Directive requirements and the 'Potential Future Cumulative Scenario', which accounts for all existing, consented, proposed and developments at the pre-planning stage.

With regard to the Knockshanvo development (in pre-planning), the proposed Oatfield Wind Farm and Knockshanvo Wind Farm will likely be perceived as one large wind energy development due to their locations being adjacent to one another. However, due to the dispersed layout, which presents as three distinct clusters, the overall scale and intensity of the combined developments are somewhat diminished. Indeed, the broad plateaux of hills and ridges within the Broadford Hills can well accommodate the combined developments without undue scale conflict. Nevertheless, the combination of both Proposed Developments will result in wind farm development becoming one of the more characteristic built features in this elevated landscape context. Whilst the combined views of the Oatfield and Knockshanvo turbines will generate some notable visual effects within the central study area and in the immediate surrounds of the turbines, the contained nature of the central study area, especially the lands directly south of the site, will often partially screen views of both the proposed Oatfield and Knockshanvo turbines. In fact, once existing intervening screening is accounted for, aside from the summit of the underlying hills and ridges, there will be very limited locations within the central study area, where clear views of all the turbines in both developments will be visible from a near distance.

With regard to other cumulative wind energy developments within the study area, these will be typically viewed as distinctly separate developments to the proposed Oatfield wind farm but will further increase the intensity of wind farm development within this landscape context. There is potential for some intervisibility with the proposed Ballycar Wind Farm development, especially from receptors located within the valley between the Proposed Development and Woodcock Hill. However, the high degree of dense intervening vegetation will heavily dilute the potential for clear views of the entire arrays in both developments. In similar circumstances to Ballycar Wind Farm, there will still be some clear opportunities to afford combined views of the Proposed Developments and the proposed Fahy Beg and Lackareagh developments, both of which are situated some 5.5km to the east of the site and are afforded a clear degree of separation from the Proposed Developments. They will contribute to a notable increase in the intensity of

wind farm development in this aspect of the study area, albeit they will present as distinctly separate developments to the proposed Oatfield turbines.

Overall, and as per **EIAR Chapter 14**, it is considered that there will be a notable sense of wind farm proliferation within the central study area and in the wider eastern half of the study area. Wind farm development will become one of the more prominent built developments within the surrounding landscape, albeit these effects are slightly diminished as a result of the siting of the Knockshanvo development immediately adjacent to the Proposed Development. This results in the combined development being perceived as one larger consolidated array of turbines. Furthermore, due to the similar scale of the turbines in both developments, they will not generate any notable negative effects relating to scale conflict or and strong sense of visual tension between the two turbine arrays.

In conclusion, should all of the Proposed Developments within the study area be permitted and constructed, it is considered that the Oatfield Proposed Development will contribute to a cumulative effect in the order of High-medium in the potential future baseline scenario. It is not considered that the Proposed Development will generate significant cumulative landscape and visual effects.

3.7 Theme 7: Cumulative traffic and transport effects

There were several concerns regarding the cumulative impact of the construction phases of the Proposed Development with other proposed wind farm developments in the area.

Section 16.12 of **EIAR Chapter 16 Traffic and Transport** and Section 17.9 of **EIAR Chapter 17 Air Quality** assesses cumulative effects for the Proposed Development which included other wind farm projects at various stages of planning and any other permitted projects.

Furthermore, **memorandum no. 12** elaborates on the concerns noted about the potential disruption that may be caused during the construction of the proposed wind farm. The section provides more information about the suitability of local roads, traffic congestion and road Safety for construction traffic.

There are eight active quarries within 10km of the Proposed Development and the active quarries are using the same material haul routes as the proposed turbine delivery route (TDR) for the Proposed Development. All developments are expected to follow best practice measures to control and minimise emissions from traffic and therefore the cumulative construction phase effects are considered not significant during the construction phase.

In addition, **memorandum no. 13** noted that the Proposed Development's estimates for traffic volumes during the operational phase are low. Additionally, with the implementation of best practice measures to minimise dust emissions for both the Proposed Development and other developments, exceedance of the relevant air quality standards is considered unlikely and cumulative operational phase effects are considered not significant during the operational phase.